IN THE CLAIMS:

1. (Original) Continuous process for sterilization and, optionally, virus inactivation of fluid media (1), by a combined application of a heat treatment (2, 3, 55) and UV irradiation treatment (4), wherein the heat treatment of the fluid media takes place at a sterilization temperature of 40° to 135°C. and the irradiation takes place at an irradiation density of 5 to 300 W/m^2.

2. (Original) Process according to Claim 1, wherein the fluid media is held at the sterilization temperature for up to 50 seconds.

3. (Original) Process according to Claim 1, wherein the fluid media is heated to the sterilization temperature and, after being treated at the sterilization temperature is cooled, and said heating and cooling take place independently of one another within and 0.1 to 10 seconds of each other.

4. (Original) Process according to Claim 1, wherein the thermal treatment takes place in successive steps of heating (2), temperature holding (55), and cooling (3), and the UV treatment (4) takes place during the thermal treatment.

5. (Original) Process according to Claim 3, wherein the thermal treatment is carried out with high-performance heat exchangers a thermal conductivity of k > 1000 W/m2*K.

6. (Original) Process according to Claim 5, one or more of said treatment steps are

carried out using pre-sterilized disposable reactors which have been cleaned according to GMP.

7. (Original) Apparatus for carrying out the process according to any one of Claims 1 to 6, comprising at least a heat treatment reactor (2), with an optional temperature holding section (55), a UV irradiation reactor (4) and a cooling reactor (3), wherein at least the heat treatment reactor and the UV irradiation reactor each comprise a sterilization and/or inactivation chamber (8) through which the fluid media(1) flows, which is formed of a deformable, helical, profiled hollow cylinder (5) which is drawn tight onto the wall of a rigid, straight, cylindrical support body (6), the cylindrical support body of the heat treatment reactor being of a heat conductive material and the cylindrical support body of the UV irradiation reactor being transparent to ultra violet irradiation.

8. (Original) Apparatus according to Claim 7, wherein said deformable, helical hollow cylinder (5) is a corrugated plastic hose which is connected at both ends to distributor heads (9, 10) for delivery and discharge of said fluid media.

9. (Original) Apparatus according to Claim 8, wherein said distributor heads (9, 10) have tangential or radial product delivery and discharge lines, free of dead space, in an annular gap (13) between distributor head (9, 10) and support pipe (6).

10. (Original) Apparatus according to Claim 8, wherein the distributor heads (9, 10)

are worked from the hose ends by thermal deformation of the corrugated hose or are made from a plastic material produced and worked by injection-molding or stretching, or by a combination of injection molding and stretching, and are connected with a force fit to the hose ends which are cylindrically widened, with an O-ring connection (32, 5, 33) pressed on from the outside.

11. (Original) Apparatus according to Claim 8, wherein said corrugated hose has an outer jacket (21) or a reinforcement (50).

12. (Currently Amended) Apparatus according to Claim 8 **or** 11 , wherein said outer jacket (21) is formed by a shrinkable plastic tube, a pipe pushed over the plastic hose, or a two-part cylindrical shell, and said reinforcement is formed of a steel or plastic coil.

13. (Original) Apparatus according to Claim 7, wherein said UV reactor comprises one or more UV emitters (25) as energy source in the cylindrical support body (6), and the cylindrical support body (6) is made of a material transparent to UV light, and optionally has a corrugated plastic hose as said deformable helical profiled hollow cylinder (5).

14. (Original) Apparatus according to Claim 7, further comprising windows (64) formed in the distributor heads (9, 10) and sealed in the distributor heads (9, 10) via an O-ring connection (31, 64), for observing the UV energy radiated into the product.

15. (Original) Apparatus according to Claim 14, further comprising UV sensors (26, 27) built into the distributor heads (9, 10) for detecting the UV radiation intensity radiated into the product chamber.

16. (Original) Apparatus according to Claim 7, wherein said heat treatment reactor (2) comprises a pipe formed of heat transmitting material as the support body (34), and a corrugated hose (5) made of plastic as said deformable helical profiled hollow cylinder.

17. (Original) Apparatus according to Claim 7, further comprising an insert element (35, 43) incorporated in the centre of the support pipe (34) of the heat treatment reactor (2) to narrow the cross section for heat transfer fluid flow through the support pipe (34).

18. (Original) Apparatus according to Claim 17, wherein said insert element (35, 43) has terminal flange connections which are connected releasable by a thread or a bayonet closure (44, 45) and seal off the inner space of the support pipe (34).

19. (Original) Apparatus according to Claim 18, wherein said insert element (35, 43) has a radial distributor (40) for heat transferfluid.

20. (Original) Apparatus according to Claim 17, wherein the insert element (35, 43) has a helical inner contour.

21. (Original) Apparatus according to Claim 7, wherein said heat treatment reactor comprises a support pipe (62) which is closed at one end and is open at the other end and has, at said other, open end, an insert element (35, 43, 52) with inlet and outlet for heat transferfluid.

22. (Original) Apparatus according to Claim 21, wherein the insert element (35, 43, 52) is comprised of a flanged pipe in which an inlet line is connected to the pipe interior and an outlet line is connected to a gap (47) between the insert element and the support pipe (62).

23. (Original) Apparatus according to Claim 7, wherein said heat transfer reactor comprises an electrical resistance heating source (57), which is inserted into a support pipe (63).

24. (Original) Apparatus according to Claim 23, further comprising an annular gap (47) between said heating source (57) and said support pipe (63), which annular gap is filled with a heat transfer medium (59).

25. (Original) Apparatus according to Claim 24, further comprising a receiving vessel (58) connected to the support pipe (63) adapted to receive heat transfer fluid (59) displaced upon insertion of heat source (57) into said support pipe, or upon operation of said heat source.

26. (Original) Apparatus according to Claim 7, wherein said heat treatment reactor (2) comprises an inlet and an outlet having PT100 resistance sensors (60,61) for determining the heat transfer medium temperature, the product temperature, or both.

27. (Original) Apparatus according to Claim 26, wherein said sensors (60, 61) are connected to flow regulators for the heat transfer medium stream, the product stream, or both.

28. (Original) The process of claim 1, wherein said fluid media is selected from the group consisting of foodstuffs, milk products, fruit juice products, chemical or pharmaceutical products, viral vaccines, active substance or proteins produced by genetic engineering, active substances or proteins from transgenic animals or plants, and blood plasma, or products obtained from blood plasma.